

# Energy storage system equipment Specification

Customer: \_\_\_\_\_

Product name: LiFePO<sub>4</sub> Battery systemModel: ZBox60R

Author	Checked by	Approved by

Customer confirmation	
Customer company:	
Signature	Company signature
Date:	Date:

# Battery System Specification

## 1. Overview

ZBox60 is a Lithium iron phosphate battery which designed for energy storage system. This battery system adopts a modular design and generally consists of two modules: a high-voltage control box and a battery box. And this product has big advantages on safety, cycle life, energy density, fast charging, and environmental protection.



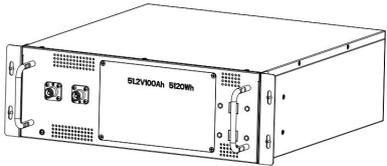
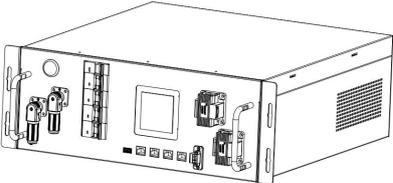
## 2. Advantages

The battery energy storage system consists of a rack, a high-voltage control box, and battery box.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution;

- Adopting a standard 19 inch rack design and modular design;
- Integrated communication interface, CAN2and RS485 communicate with Inverter;
- A high-precision and high-performance battery management system achieves efficient operation;
- Standard pack, easily for installation, rapid deployment and capacity expansion.
- BMS provides complete management and protection for the battery.
- Voltage warning and protection for module and each single cell.
- Current warning and protection, and the maximum operating current can be customized.
- Temperature warning and protection.
- Battery module SOC and SOH calculation, display the accurate battery status.
- Supports maximum 3 battery clusters in parallel, up to 200kWh

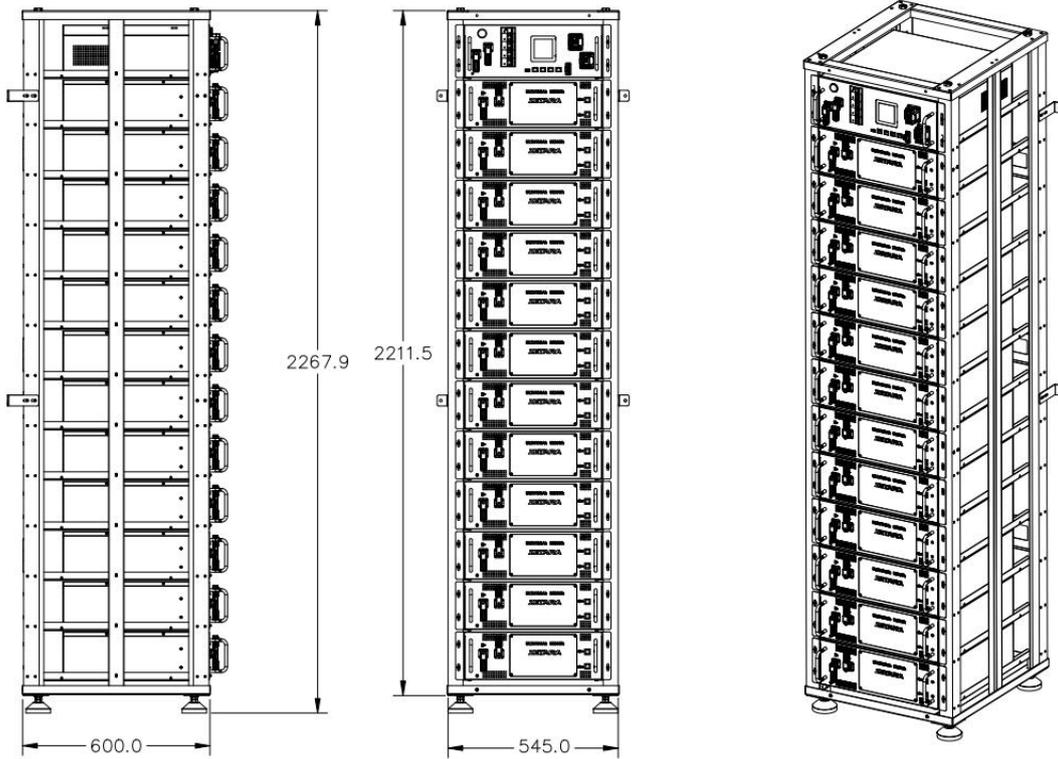
### 3. Battery parameter

Single cell	Cell Type	LiFePO4 Aluminum shell	
	Rated	3.2V/100Ah	
	Operating voltage range	2.5~3.65V	
	Dimension (T*W*H mm)	47.8*173.9*132.6	
	Weight	≈2.2kg	
	Rated Charging current	0.5C	
	Rated discharging current	0.5C	
	Impedance(1kHz)	<0.4mΩ	
Battery module	Module Voltage	51.2V	
	Rated capacity	100Ah	
	Pack	1P16S	
	BMU inside	1set	
	Dimension (W*D*H mm)	470*442*154	
	Weight	43kg	
	Cooling mode	Natural cooling	
	Power Terminal	Plug-in type	
High-Voltage Box	Rated Voltage	DC1000V	
	Rated Current	100A	
	Maximum Current	120A	
	SOC Accuracy	<5%	
	IP Rating	IP54	
	Cooling mode	Natural Air Cooling	

**Battery Energy Storage System**

Model	ZBox60R	
Voltage Range(V)	200~700	5~12 modules
Series & Parallels	1P80~192S	【Max 3 clusters parallel】
Rated Voltage(V)	614.4	【Max 12 modules series】
Rated Capacity (Ah)	100	
Rated charge/discharge current(A)	50/50	SOC:10 ~ 90%
Rated Energy(kWh)	25.6~61.44	5~12 modules
Maximum Discharge Current(A)	75	
Maximum Charge Current(A)	75	
Cycle life (@25°C, 0.5C/0.5C, 80%DOD)	> 6000	
Dimension (W* D* H,mm)	545*600*2270	
IP Grade	IP20	
Total Weight (Kg)	550kg	
Battery Thermal Management	Natural cooling	
Operating temperature	-10 ~ 45°C	
Operating humidity	5%~95%R.H.	
Communication	CAN/RS485	
LCD Screen monitor	Touch screen, check battery data & setup parameters	

**4. Drawings**



**614.4V100Ah  
Battery cabinet**

### 5. Packing List

No.	Item	Specification	Number	Remarks
1	LiFePO4 battery pack	ZHES51100 51.2V/100Ah battery pack	5-12	Support battery pack quantity customization
2	BMM	ZT16S Battery management unit	12	Integrated in the battery pack
3	High voltage box	High voltage box includes BCM	1	
4	HMI	LCD touch screen	1	Integrated on the HVB
5	Power cable	Power cable between battery racks and CBMS	1set	
6	Communication cable	Communication cable between battery module and BMU	1set	
7	User manual	User manual	1	

## 6. SAFETY

The ZBox60 is a high voltage DC system, operated by skilled/qualified personnel only. Read all safety instructions carefully prior to any work and observe them at all times when working on with the system.

Incorrect operation or work may cause:

- ◆ injury or death to the operator or a third party;
- ◆ damage to the system hardware and other properties belonging to the operator or a third party.

### Skills of Qualified Personnel

Qualified personnel must have the following skills:

- ✓ training in the installation and commissioning of the electrical system, as well as the dealing with hazards;
- ✓ knowledge of this manual and other related documents;
- ✓ knowledge of the local regulations and directives.

Symbol		Definition
	DANGER	Lethal voltage! Battery strings will produce high voltage DC power and can cause a lethal voltage and an electric shock. Only qualified person can perform the wiring of the battery strings.
	WARNING	Risk of battery system damage or personal injury DO NOT pull out the connectors while the system is Operating! De-energize from all multiple power sources and verify that there is no voltage.
	CAUTION	Risk of battery system failure or life cycle reduction.



**Danger:** Batteries deliver electric power, resulting in burns or a fire hazard when they are short circuited, or wrongly installed.

**Danger:** Lethal voltages are present in the battery terminals and cables. Severe injuries or death may occur if touch the cables and terminals.



**Warning:** DO NOT open or deform the battery module, otherwise the product will be out of warranty scope

**Warning:** Whenever working on the battery, wear suitable personal protective equipment (PPE) such as rubber gloves, rubber boots and goggles.

**Warning:** ZTR-HV system working temperature range:  $-10^{\circ}\text{C}\sim 45^{\circ}\text{C}$ ; Optimum temperature:  $18^{\circ}\text{C}\sim 28^{\circ}\text{C}$ . Out of the working temperature range may cause the battery system over / low temperature alarm or protection which further lead to the cycle life reduction as well as. It will affect the warranty terms as well.



**Caution:** Improper settings or maintenance can permanently damage the battery.

**Caution:** Incorrect inverter parameters will lead to a further faulty/damage to battery.

## 7. Disposal

The batteries may only be disposed of in accordance with the disposal regulations for used batteries applicable at the time of disposal. Immediately decommission any damaged batteries and please contact your installer or sales partner first before disposal. Ensure that the battery is not subjected to moisture or direct sunlight. Ensure quick removal by your installer or ZETARA.

- ① Batteries, including rechargeable batteries, may not be disposed of in household waste. You are legally obligated to return used batteries.
- ② Used batteries may contain pollutants that can damage the environment or harm your health if they are not stored or disposed of properly.
- ③ Batteries also contain important raw materials such as iron, zinc, manganese, copper, cobalt or nickel and can be recycled.

Do not dispose of batteries in household waste!



**Li-ion**

